## REMARKS

Reconsideration of the Office Action dated March 3, 2008 is respectfully requested.

By this Response, claims 1 and 6 are amended. Claims 7, 9, 10 and 19 are canceled. In particular, the limitations of claims 7, 9, 10 and 19 have been incorporated into claim 1. Also, new claims 25-29 are added. No statutory new matter has been added. Support for all claim limitations, as well as new claims, can be found in the disclosure as originally filed. There are 24 pending claims of which 2 are independent after claim cancelation. Thus, no additional claim fees are filed herewith.

***35 U.S.C. § 112, First Paragraph***

Claim 1, as amended herein, is free of the phrase "in the absence of tin". Thus, the rejection under 35 U.S.C. § 112 is moot.

***35 U.S.C. § 103(a)***

Claims 1-7 and 9-24 were rejected in the Office Action as being unpatentable over Zimmerman (US 5,849,176) in view of Reed et al (US 5,656,150). This rejection is respectfully traversed based on the discussion below.

Zimmerman discloses a process consisting in adding compounds containing silicon and sulfur ('additive compositions') to a feed to be cracked. The process of Zimmerman is not a pretreatment of the metal sufaces of a reactor with a stream of steam comprising hexamethyldisiloxane and DMDS.

Moreover, the stream of steam disclosed in Zimmerman is only used as a diluent for the additive compositions of Zimmerman added to the feed during pyrolysis of n-heptane, as specified for example in column 2 line 29, example 9 and table 2 of Zimmerman.

The comparative example 5 of Zimmerman is not an example according to the invention of Zimmerman, and gives lower results (higher coke formation rates) than those of example 9, which is an example according to the invention in Zimmerman '176 (compare figures 5 and 6). Therefore, the person skilled in the art would not have been drawn to select this example 5 and would not modify this example by adding all the characteristics of the present invention as

claimed in amended claim 1. (See also the discussion below regarding new claim 25 and the deficiencies in Zimmermann).

Moreover, the Si:S ratio in Zimmerman is between 5:1 and 1:1, and fails to disclose the range of about 2:1 and 1:2 currently found in amended claim 1.

As to Reed, this reference fails to remedy the deficiencies described above for Zimmermann. Reed discloses an antifoulant composition comprising tin and silicon (column 4 lines 15-20). Reed neither disclose nor suggest a pretreatment with a stream of steam comprising both hexamethyldisiloxane and at least one non-silicon-containing sulphur. (See also the discussion below regarding new claim 25 and Reed).

Therefore, Reed also does not disclose the claimed ratio let alone any Si:S ratio.

In conclusion, it is maintained that the recited documents (even in combination) do not suggest the invention of claim 1 as presently claimed. Consequently, it is respectfully submitted that the presently claimed invention of claim 1 is new and satisfies the condition of non-obviousness as does the claim 1 dependant claims.

Further, with respect to new independent claim 25, the claim 25 invention is also respectfully submitted to be patentably distinguishable from Zimmermann (US 5849176) in view of Reed ('150) due to, for example, the fact that Zimmermann does not teach a *pretreatment step* comprising steam and one silicon compound and one sulphur compound. In order to further illustrate this point, Zimmermann discloses in Example 5 that the apparatus was pretreated with an equimolar mixture of hydrogen and methane containing tri-methyl-silyl-methyl-mercaptan for 60 minutes at 880° C. See col. 5, lines 49-53. Moreover, Example 9 discusses the same set-up as used in Example 5 and that the substrate is thermally pre-treated with tri-methyl-silyl-methyl-mercaptan at 880° C, and then there is tracked the coke formation rates during the *pyrolysis* of n-heptane treated with 100 ppm tri-methyl-silyl-methyl-mercaptan in the presence of steam as the dilutent. See cols. 6-7, lines 62 to end and 1 to 4. Thus, steam is described as being added during the pyrolysis step, not the *pretreatment step.*

In addition, a second Zimmermann reference (WO95/22588 and associated US 5922192) sheds light on how Example 5 and 9 of Zimmermann '176 should be considered. Particularly, Example 6 of WO95/22588 discloses that steam is not suitable for long-lasting suppression of

coking on materials pretreated with tri-methyl-silyl-methyl-mercaptan. See col. 7, lines 44-61 of the corresponding US Patent No. 5922192 quoted below.

> *EXAMPLE 6*
>
> *Embodiment Example According to the Invention*
>
> *In the same apparatus as that described in Example 1 and under the conditions described in Example 4, the influence of the carrier gas used for pretreatment on the coking rate during pyrolysis of n-heptane was investigated. Hydrogen, methane, nitrogen and steam were used instead of a 1:1 mixture of hydrogen and methane.* ***The variation in the carrier gas used for pretreatment shows that steam is not suitable for long-lasting suppression of coking on materials pretreated with trimethylsilylmethyl mercaptan.*** *After comparable low initial values ($r=1.7 \mu\eta/cm^2 \cdot min$) were measured, the coking rate increased continuously and reached a value of $r=25 \mu\eta/cm^2 \cdot min$ again after a test period of only 120 minutes.*

It is noted that both of these references were invented by the same inventive entity, have the same assignee and have a similar PCT filing date. Because these patents are clearly related, the teaching provided in the related Zimmermann WO '588 that steam is unsuitable for coke suppression in the context of the method in Zimmermann '176 is respectfully submitted to preclude the assertion in the Office Action that the Example 9 discussion would render it obvious to utilize the same in the Example 5 pretreatment step. In other words, it is respectfully submitted that the specific indication in Zimmermann WO '588 that steam is not suitable for the exact same pretreatment process set forth in Zimmermann '176 is submitted to be controlling as compared to, for instance, any general indication of using steam in a pretreatment step as in Example 9 or in the below discussed Reed. Based on the foregoing, it is respectfully submitted that the Examiner's reliance on Zimmermann '176 for teaching steam in the *pretreatment step* is not in accordance with 35 U.S.C. 103.

Reed '150 was applied as a secondary reference for discussing steam in the pretreatment step. For the reasons outlined above, it is respectfully submitted that Reed fails to remedy the above noted deficiencies in Zimmermann '176 as the disclosure in Reed does not warrant the revisions asserted in the Office Action when considering the combination of features in claim 1 and the teaching of avoiding steam in the context of the base reference of Zimmermann '176.

Furthermore, new independent claim 25 includes additional language that further differentiates the claim 25 invention over either or both of Zimmermann and Reed, in any combination. For instance, in connection with the noted process steps set out in claim 25, the claim 25 invention provides for a high inhibition level of coke as in the range of 36% to 66%,

which is a level not attributable to the relied upon references due to the above noted differences. Support for this language in claim 25 is found, for example, in the paragraph bridging pages 18 and 19 and on page 12, line 14.

Further, new claim 26 describes an inhibition of coke percentage on the metal walls of the reactor and the heat exchanger from 53% to 66%. (See also pages 18 and 19).

Also, dependent claim 29 reference temperature values for the process not disclosed or suggested for the noted claim 25 process. The temperature range for the reactor in Reed '150 is between 537.77° C to 1093° C (1000° F to 2000° F). See col. 6, lines 5-22.

## CONCLUSION

All of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Therefore it is respectfully requested that the Examiner reconsider all presently outstanding rejections and that they be withdrawn. It is believed that a full and complete response has been made to the outstanding Office Action and, as such, the present application is in condition for allowance. If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at the number provided.

If any fees are lacking with respect to this filing, such fees are hereby authorized to be charged to Deposit Account No. 02-4300, Attorney Docket No. 033808R172.

Respectfully submitted,

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